ZETRON®

MODEL 4010

Radio Dispatch Console

Rackmount Console, Model 4010R

The Zetron Model 4010 Dispatch Console is a self-contained, multichannel, radio control console which is available in both desktop or rackmount styles. It provides dispatchers with an efficient means of monitoring and dispatching for a system comprised of up to twelve radio channels. The M4010 presents the operator with both aural and visual cues to simplify the task of supervising a multichannel communications system.

Desktop Console, Model 4010

FEATURES

- **Full-featured console suitable for office environments or dispatch centers**
- **Accommodates up to 12 channels with a mix of control types: DC remote, tone remote, local control, E&M control**
- **FULLY field programmable. "Any button, any function":**
  - – Individual volume adjustment, mute, and instant transmit per channel
  - – Simul-Select, All-Mute, Alerts, and Site Intercom
  - – Built-in encoder with optional single button paging steers tones to proper channel and frequency
  - – Channel-to-channel patch and optional phone patch
- **Interfaces with outside phone line or analog PBX port — ideal for phone patches or administrative calls**
- **Optional Telephone/Radio Headset Interface allows one common headset to operate both radio console and separate telephone set**
- **Optional ANI decode/display shows unit identification of calling units**

OVERVIEW

The Model 4010 Dispatch Console offers a cost-effective high-performance solution for a wide range of public safety, utility, and private land mobile radio applications. It is specifically designed for police, fire, EMS, railroad, and plant security operations. Attractive enough for office environments, the Model 4010 is rugged enough for sustained, "24/7" communications center use.

The Model 4010 can be configured with as few as two channels and grow to twelve channels with the addition of modular channel cards. Channel cards may be specified to be compatible with all common local and remote control standards. The rackmount 4010 may be equipped with an optional 60 button expansion panel (if required).

OPERATION

The Model 4010 has been designed to simplify the task of operating a multichannel system, allowing operators to concentrate on the content of their dispatching activities.

MultiFunction LCD - The backlit, wide viewing angle LCD serves several purposes. It normally shows the time and the audio level. During paging, it indicates the pager code being sent. In the event of a self-diagnosed problem, the display spells out the problem in plain English. ANI codes may be displayed as well.

Buttons - Button functions are clearly labeled and color coded on the key's surface to provide easy function association. All primary functions are performed by a single keystroke.

Indicators - The indicators for the button's function are located next to the button for clear association. For dual functions, the adjacent LED indicators use different colors to ensure positive identification. The wide viewing angle ensures excellent visibility even across the room.

Select/Unselect Speakers - Two speakers provide a left/right audio effect, making it easy to distinguish whether the call was from the primary (Selected) channel or some other channel. Selecting a channel moves its monitor audio to the Select speaker.

Individual Channel Volume/Mute - The volume on each channel may be set independently from others, allowing the operator to prioritize listening based on volume level. The LCD display shows volume percentage, allowing accurate settings. Single button muting instantly reduces the volume of a channel to a predetermined level.

Call - When channel activity is present, the channel's "CALL" indicator blinks, making it easy to locate the source of the call. The call indication remains for a few seconds after the call stops in the event the operator is busy with another activity.

Patch - The simplex, VOX operated patch can patch together channels-to-channels or channels-to-telephone lines. The operator may monitor the patch and operate on other channels.

Transmit - The operator may transmit over the selected channel(s) simply by pressing the "Transmit" button or by pressing the optional foot-operated transmit switch. With "Instant Transmit", the operator may transmit over a non-selected channel to reply to a call without changing channel selection.

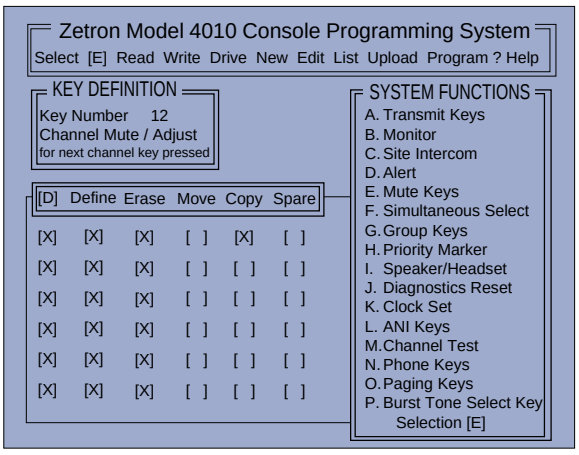
Monitor - This allows the operator to disable coded squelch on the selected channel so that the channel may be monitored for traffic prior to transmitting.

Alert - Up to four different alert tones may be transmitted to indicate the type or priority of the dispatch to follow.

Auxiliary Input/Output - Operators may control various contact-closure operated devices (such as lights, door locks, and voter controls) from the console. External inputs (such as voter displays and alarms) may be monitored at the console.

Instant Call Paging - The operator may "tone out" an entire sequence of pages with the press of a single Instant Call button. Paging sequences are automatically routed to the proper channel and frequency, eliminating potential human errors. Paging sequences may contain self-initiating alert tones for indicating specific types of events. The button's indicators provide a "check list" to verify that the proper pages were sent. Multiformat capability eliminates the need to have a different encoder for each type of pager/decoder.

PROGRAMMING


Zetron Model 4010 Console Programming System
Select [E] Read Write Drive New Edit List Upload Program ? Help
KEY DEFINITION
Key Number 12
Channel Mute / Adjust
for next channel key pressed
[D] Define Erase Move Copy Spare
[X] [X] [X] [ ] [X] [ ]
[X] [X] [X] [ ] [ ] [ ]
[X] [X] [X] [ ] [ ] [ ]
[X] [X] [X] [ ] [ ] [ ]
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SYSTEM FUNCTIONS
A. Transmit Keys
B. Monitor
C. Site Intercom
D. Alert
E. Mute Keys
F. Simultaneous Select
G. Group Keys
H. Priority Marker
I. Speaker/Headset
J. Diagnostics Reset
K. Clock Set
L. ANI Keys
M. Channel Test
N. Phone Keys
O. Paging Keys
P. Burst Tone Select Key
Selection [E]

One of the unique features of the Model 4010 system is that it is FULLY field programmable with the Console Programming System (CPS) and an IBM-compatible personal computer. CPS not only allows channels to be configured for various types of base stations, but it also allows any button to be assigned any available function. This eliminates costly upgrades while allowing the buttons to be reconfigured at any time to accommodate new operating procedures or radio system changes. Key top labels are removable and do not require engraving, allowing the keys to be relabeled as easily as they are programmed. Standard key top legends are supplied by Zetron while custom legends may be created in the field using transparent key tops.

The console is shipped from the factory programmed and labeled to customer specifications, with a diskette containing the Console Programming System and the factory programming files. CPS runs on an IBM-compatible PC under DOS with a minimum of 512K of memory, a 3.5" disk drive, and an RS-232 serial port.

Changing the function of a key is simply a matter of using the cursor to select a new function from a menu-style list on the computer screen. When all selections are made, the new configuration is saved on the diskette and printed out for a paper copy. When ready, the stored configuration may be downloaded to the console in a matter of seconds. Configurations can also be uploaded from a console to a PC for storage or modification.

INSTALLATION AND MAINTENANCE

The Model 4010 is fully self-contained requiring no external electronics. It uses industry standard 25-pair cables and punchdown blocks for interfacing to radios and leased lines. Standard or lightning-protected connectorized punchdown blocks are available. External options, such as desk-mic and headset jack are also connectorized. All line adjustments, status LEDs and configuration switches are accessible through the rear panel without any disassembly.

The Console operates from 12 Volts DC, which is available from Zetron's universal power-supply that accepts any voltage from 95 to 250 VAC at 47 to 440 Hz. The universal power-supply has UL, CSA and VDE approvals.

The "clam-shell" design of the desktop Model 4010 and the easily-removed back and top of the rackmount model make access for maintenance and upgrades easy. All channel electronics are contained on plug-in circuit cards for easy replacement or expansion. Audio throughout the console remains analog and is not digitized. In addition to providing superior audio fidelity, this makes audio troubleshooting easier. The service manual contains full schematics, parts IDs, parts lists and theory of operation. Factory service, spare boards, and spare parts kits are available.

OPTIONS

The wide variety of options available for the Model 4010 allow it to be tailored to any dispatch environment.

Gooseneck Microphone - The unidirectional 12-inch gooseneck mounts directly to the Model 4010. ①

Desk Microphone - The omnidirectional dynamic desk microphone has its own transmit and monitor bars. ②

Handset and Cradle - When the PTT handset is in the console mounted cradle, the console's "select" speaker is live. When the handset is lifted, the "select" audio reverts to the handset earpiece.

Headset Jack - The headset jackbox may be mounted to the side of the console or under a desk writing surface. When a headset is not plugged into the jack, the console's "select" speaker is live; when it is plugged in, the "select" audio reverts to the headset earpiece.

Telephone Radio Headset Interface - The telephone radio headset interface allows one common headset to be used for both radio and telephone, with a volume control for each. When the telephone set indicates that it is connected to a line (off-hook), the common headset is switched to the telephone and the console's "select" speaker becomes live. If the operator transmits on the console, the headset is momentarily switched back to the radio console. When the telephone is disconnected from the line, the headset reverts back to the console and the console's "select" speaker becomes muted. Requires off-hook contact closure from telephone. ③

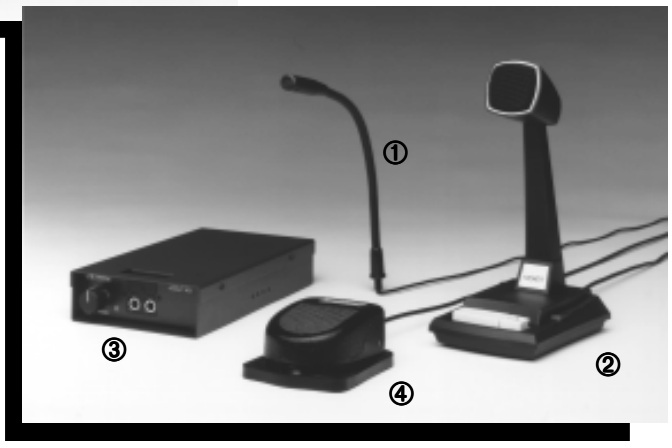
Footswitch - Footswitches are available for controlling selected channel transmit and monitor, allowing hands-free operation. ④

Automatic Number Identification (ANI) - ANI codes generated by mobile or portable radios are shown on the console's LCD display, when M4010 is equipped with an ANI decoder.

Phone Patch - The phone patch option allows the console operator to establish a patch between any radio channel and a telephone line. This option also allows the operator to originate and answer telephone calls using the console.

Paging Formats - The built-in paging encoder is capable of generating all popular signaling formats. The two most popular, Motorola/GE two-tone, and DTMF are standard. Optional formats include 1500 Hz or 2805 Hz rotary dial, Plectron, Quick-Call I (2+2), and 5/6 Tone.

Expansion Panel - The Model 4115 Console Expander provides 60 extra programmable keys for controlling radio channels and instant call paging functions. With the Expansion Panel installed, the Model 4010R features 136 programmable keys. ⑤



SPECIFICATIONS

TRANSMIT ELECTRICAL SPECIFICATIONS

Audio Output	+10dBm max. into 600 ohm line
Output Impedance	Transmit: 600 ohm balanced. Idle: 600 or 3500 ohms
Distortion	<2% at full output. Hum, Cross-Talk all -50 dB at full output
Microphone Input	-65 dBm for full output
Aux. Mic Input	-20 dBm for full output
Page/Spare Input	-15 dBm, not compressed
Frequency Response	-3 to +1dB from 250-5000 Hz except guard tone notch
Compression	Input level increase of 30 dB above knee of compression causes <3 dB output increase

RECEIVE ELECTRICAL SPECIFICATIONS

Input Impedance	600 or 10K ohm (4-wire)
	3500 ohm (2-wire)
Line Balance	66 dB at 1000 Hz
Rx Sensitivity	-30 dBm max. at knee of compression; adjustable
Frequency Response	-3 to 1 dB from 250-5000 Hz except guard tone notch
Compression	Input level increase of 30 dB above knee of compression causes <3 dB output increase
Distortion	<2%
Call Light	Sensitivity 20 dB below knee of compression
Audio Outputs	5 watts into 4 ohms
Mute	Programmable from 0 to -28 dB or full mute
	"All-mute" time programmable

PHYSICAL SPECIFICATIONS

Size: Desktop	9" high x 18" wide x 14" deep
Rackmount	10.5" high x 19" w x 10.5" deep
Weight	15 lbs.
Operating Temp	5 to 50 degrees Celsius

OTHER ELECTRICAL SPECIFICATIONS

Channel Interface	Tx/Rx Audio pair (for 2w/4w Rx Audio pair (for 4w)
	PTT relay contact
	Busy out
	Busy in / X-Mute in
	Supv control / main-stby
	Recorder Out
Channel Control	Local, E & M, Tone Remote, DC Remote, Telephone (tip/ring)
Local Control	PTT normally open relay contact rated 1.0 A at 24 VAC/DC
E & M Control	Tx control via PTT relay, external 48V required
Tone Control	15 standard tones supported, programmable (no trimmer adjustment) 650-2050 Hz. High Level Guard Tone duration 120-600 msec. Function Tone Duration 40 msec. Guard Tone Freq. 2175 Hz, alterable. Tone freq. accuracy +/-0.2%; timing accuracy +/-1.0 %
DC Control	Programmable for +/-2.5, 5.5, 6.0, 11, 12.5, and 15.5 mA. Operable up to 8K ohm loop resistance
	Accuracy +/-.25mA
Busy Chan. Detect	Local Cross-Busy detection; Guard Tone or DC Control detection (LOTL) optional
Power Input	11.5 to 15 VDC, 3.5A max or 95 to 250 VAC, 47 to 440 Hz 64 watts max
Aux Output	4-Form C contacts rated
	0.5 Ampere
	4-Open collector outputs rated
	0.25 Ampere
Aux Inputs	8-TTL inputs (0-5 VDC)

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See Zetron price list for option pricing. Specifications subject to change without notice. Literature number: 005-0447K May 2000